

JUN 28 1939

# FISHERY MARKET NEWS

JUNE 1939



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## FISHERY MARKET NEWS



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# FISHERY MARKET NEWS

A REVIEW OF CONDITIONS AND TRENDS OF THE COMMERCIAL FISHERIES

June 1939

Washington, D. C.

Vol. 1, No. 6

## SUMMARY

### Fresh Fish

New England.--Volume of April vessel landings 1 percent under same month a year ago, but value 16 percent greater. Average price per pound up almost one-third of a cent from last year but decline to 2.18 cents from 3.04 cents in March. Catch of all important species greater than in March; cod landings doubling. For first four months in 1939 volume and value of landings decreased 12 percent and 2 percent, respectively, as compared with 1938.

Commercial catch of New England States during 1937 amounted to 671 million pounds, valued at \$19,937,000, an increase of 2 percent in quantity and 11 percent in value over previous survey in 1935. Manufactured products valued at over \$24,000,000.

Massachusetts.--New Bedford vessel landings in 1938 totaled 18 million pounds, valued at almost a million dollars. Record lobster catch in 1938; volume 8 percent greater than 1937, but average price per pound 4½ cents less.

Connecticut.--Production and prices of shad below normal for Connecticut River. Flatfish catch improved in May but prices low. Oyster prices fairly satisfactory; seed oyster fishery prospects poor.

Rhode Island.--Market oyster production one-third less than last year; seed oyster supply depleted. Hard clams abundant and prices higher; opening of private grounds may double production. Soft clam supplies good and prices normal. Scup abundant but price one-half that of last year. Most of few remaining Newport draggers prepare for swordfishing.

Middle Atlantic States.--Commercial catch in 1937 amounted to 265 million pounds, valued at \$7,896,000, a decrease of 5 percent in volume and an increase of 23 percent in value over most recent previous survey in 1935. Value of shellfish greater than fish despite lesser volume. Oyster meats, clam meats, menhaden, flounders, and shad most valuable varieties. Manufactured products valued at \$18,659,000.

Florida.--Crab meat industry flourishes in Jacksonville and Mayport areas. Fort Pierce shrimp catch in 1938 almost 50 percent greater than 1937. Improvements planned at several shrimp landing ports to aid fishermen.

Alabama.--Oyster and shrimp seasons best in four years. Crabs reported plentiful; prices up slightly. Fresh-water fish scarce.

Great Lakes States.--Chicago receipts in April, 17 percent under March. Wisconsin and Michigan supplied greatest quantities, chiefly smelt and lake trout, respectively.

Pacific Coast States.--Commercial catch in 1937 amounted to over one and one-half billion pounds valued at \$28,776,000, a decrease of 18 percent in volume and an increase of 16 percent in value as compared with 1936. Pilchard catch greatest in volume but tuna most valuable species. Manufactured fishery products valued at \$56,150,000.

### Frozen Fish

Cold-storage holdings on May 15 up 18 percent from previous month but 24 percent under same date last year. Stocks in New England 62 percent less than last year. Holdings of finny fish 29 percent below last year but stocks of shellfish 32 percent greater. During month ending May 15, fishery products frozen 20 percent under last year.

### Canned Fish

Shrimp pack in South Atlantic and Gulf States canneries inspected by Food and Drug Administration over one million standard cases for 10½ months from July 1, 1938. For first four months in 1939 California tuna pack almost double same period in 1938; yellowfin, 80 percent of total. California mackerel pack for first four months in 1939, 27 percent under 1938.

### Foreign Trade

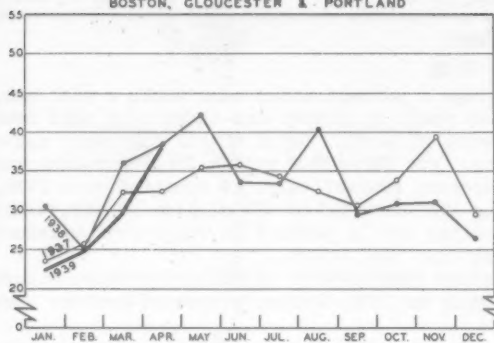
During April imports increased 16 percent in volume over a year ago; principal items being salted groundfish, fresh and frozen fresh-water fish, and canned sardines. Exports increased 14 percent in April over same month a year ago; canned salmon and canned sardines being most important. For first four months both imports and exports greater than 1938.

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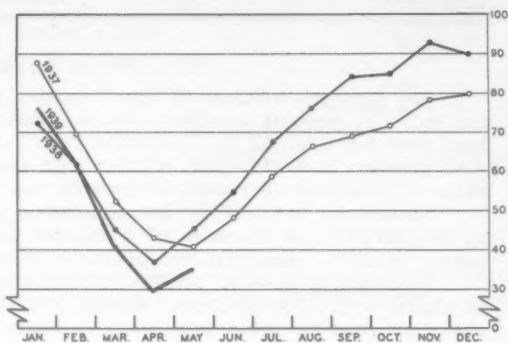
# TRENDS OF FISHERY TRADE

In millions of pounds

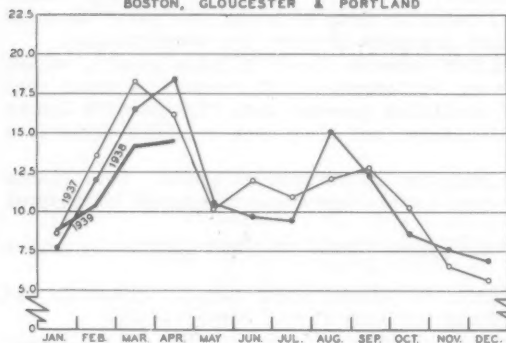
VESSEL LANDINGS, ALL FRESH FISH  
BOSTON, GLOUCESTER & PORTLAND



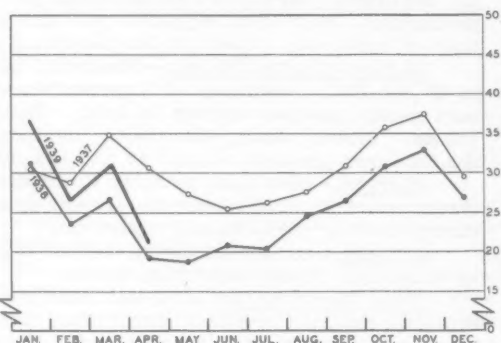
DOMESTIC COLD-STORAGE HOLDINGS OF FROZEN FISH



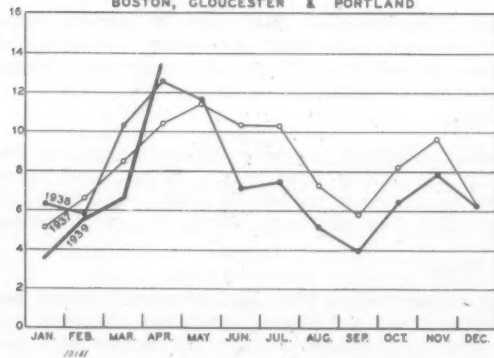
VESSEL LANDINGS, FRESH HADDOCK  
BOSTON, GLOUCESTER & PORTLAND



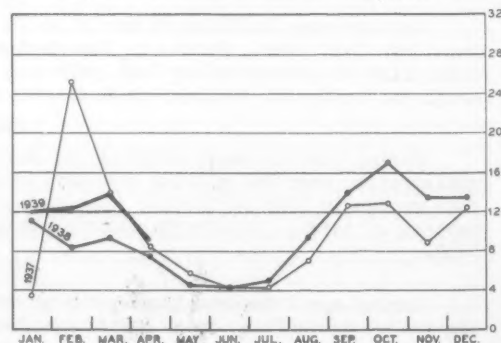
IMPORTS OF EDIBLE FISHERY COMMODITIES



VESSEL LANDINGS, FRESH COD  
BOSTON, GLOUCESTER & PORTLAND



EXPORTS OF EDIBLE FISHERY COMMODITIES



## THE CHESAPEAKE BAY SOFT CRAB INDUSTRY

By Prentiss W. Evans, Junior Fishery Marketing Agent  
Division of Fishery Industries

U. S. Bureau of Fisheries

Soft crabs are in season. During the current month--June--a visitor to New York's Fulton Market, Philadelphia's Dock Street Market, or Baltimore's Public Market will observe hundreds of boxes of soft-shell crabs being sold daily, because, while the soft crab season extends from April to November, it is usually during this month, climaxing about the Fourth of July, that soft-shell crabs are most popular as a seafood and command the highest prices. The soft crab that the visitor sees sold in these and other seafood markets is the blue crab, *Callinectes sapidus*, which, while known from Cape Cod to Texas, is especially important in The Chesapeake Bay area on the Atlantic Coast where a large industry is conducted in the catching and marketing of this delicious crustacean.

Historically, the soft crab of the Chesapeake Bay has been on the market as a seafood for a comparatively short period of time for it was as late as 1873 when the first shipment of soft crabs to market was made by Captain John H. Landon of Crisfield, Maryland, to the firm of John Martin of Philadelphia. The hard crab industry, based on the picking and marketing of fresh-cooked crab meat for food, was not begun until five years later when a plant was opened in Hampton, Virginia, for the picking of crab meat.

Considerable difficulty was at first experienced in developing a market for soft crabs since in earlier years they were believed to be poisonous. However, express agents and railroad employees whose daily runs took them through Crisfield became familiar with the edible qualities of soft crabs and succeeded in arousing the interest of fish and game dealers in larger cities, such as Baltimore, Philadelphia, and New York, in the sales possibilities of this crustacean. From this meagre beginning some sixty years ago, this fishery has developed to the point where the catch in the Chesapeake Bay area in 1937, when the most recent survey was made by the U. S. Bureau of Fisheries, amounted to nearly 20 million peeler and soft crabs. Originally begun in the Chesapeake Bay tidewater country, this fishery is now commercially prosecuted from Cape Cod to Texas. At the peak of the season at Crisfield alone, the point where the fishery originated and which continues to be the center of the soft crab industry of the world, as many as 8 express carloads, or approximately 288,000 soft crabs, have been shipped in a single day. Starting with a strictly local market, soft crabs now are being shipped to practically every State in the Union and to many of the Provinces of Canada. They have left Crisfield for destinations on the other side of the Atlantic, and shipments have been made direct to Buckingham Palace in London.

Contrary to a belief held by many unfamiliar with the fishery, hard and soft crabs from Chesapeake Bay are the same species. Hard Crabs become soft at intervals until fully grown. This occurs through the "molting" or "shedding" of the hard outer shell. It is only by shedding that crabs grow. With each shedding the crab becomes approximately one-third larger. Fertilization of the female by the hard male crab, also known as the "Jimmie" or "Chandler" crab, takes place while the female is in the soft-crab state.

The blue crab's favorite habitat is in rivers and shallow streams where marine vegetation is abundant. While the crab is to be found normally in salt water, it is quite common in waters only slightly brackish. Only a small amount, less than 20 percent of the soft crabs that are marketed, are caught while soft; the remainder are taken when they are hard "peelers" or "shedders". A peeler or shedder crab is easily distinguished by the "crabber" or fisherman through a small faint pink line which encircles the outer edge of its back fin. As the peeler becomes ripier, that is to say, as it approaches the stage wherein it will shed its hard outer shell and become soft, this faint pink line turns slowly red. After the line has become red, the peeler usually will shed within a few hours (normally at the beginning of the first subsequent flood tide), or at least within 24 hours unless unusually cool weather occurs.

While at the inception of the crab fishery peeler and soft crabs were taken by haul seines, at the present time this type of gear is relatively of little importance and the bulk of the catch is now taken by dip nets, scrapes, trot lines, or by hand.



A dip net consists of a one-fourth inch iron rod bent in the form of a hoop about one foot in diameter to which is attached a cotton-net bag with mesh about one inch square. A wooden handle 8 to 12 feet long is attached to the iron hoop. The fisherman stands on the bow of his crabbing skiff, a boat about 14 feet long, and, upon seeing the crab, drops the dip net into the water and scoops the peeler or soft crab from the bottom. Considerable agility and skill as well as exceptional eyesight is required in the catching of crabs by this method because the crabs, upon the approach of the crabber, usually hurry away with considerable speed or bury themselves in the mud or grass, which is very protective inasmuch as the color of the bottom and grass closely resembles the color of the crustacean. Dip nets are used primarily during the spring and early summer since it is then the crabs leave the cooler, deeper waters to shed in the warmer waters of the shallow streams. Quite often these streams are too shallow to float the netter's skiff so the fisherman abandons the skiff, tows a small live box or "tow-snack" which is fastened to his belt, and wades the stream with the dip net in hand. This form of crabbing is called "mud-larkin".

In deeper waters offshore or in shallow waters where the water is not clear and hence the bottoms are not visible, the crab scrape is the principal gear used. It is to be noted that during the middle and late summer, on account of the intense heat, the crabs leave the shallow waters of the "flats" for the cooler waters offshore. The crab scrape closely resembles the oyster dredge without its iron teeth and iron-mesh bag, a cotton-mesh bag being used. Scrapes, like oyster dredges, are drawn over the bottoms by vessels under sail power. After dragging on the bottom from about 75 to 150 yards, the scrape is pulled aboard the crabbing boat by hand. The contents of the bag are then dumped into a culling box after which the scrape is thrown overboard for another haul. While the scrape is being dragged over a new course, the crabber culls his catch, the soft crabs and peelers being placed in separate boxes while the immature and unmarketable crabs are thrown overboard.

The trot line is the favorite gear used in warm weather for the catching of hard crabs. A trot line usually is 1,000 feet or more in length and is baited at intervals of about 5 feet with tripe, eels, etc. The crabs seize the bait, the line is pulled into the boat over a spool, and the crabs still clinging to the bait are, by the use of a dip net, taken from the line. Many peelers and soft crabs are taken along with the hard crabs. Most of the soft crabs obtained with this gear are females from the pairs of mating crabs called "doubblers". The male, carrying the female, seizes the bait and both are captured. The reason that peelers and soft crabs are ordinarily not caught separately by trot lines is the fact that crabs in or near the shedding state eat little if anything and hence do not grasp the baited trot line.

Regardless of the gear used in catching the peeler crabs, the fisherman, immediately upon their capture, breaks their claws or "biters" before placing them in a box which is covered with moist seaweed called "sea-oars". The claws are broken to prevent the crabs from biting each other, which causes "bleeding" resulting in a high mortality.

The crabbers are in their craft as early as 2:00 A.M. and are on the crabbing grounds ready to begin work as soon as there is sufficient light to enable them to cull their catch. As a rule the best catches are made early in the morning and most of the crabbers quit work between 11 A.M. and noon.

In hot weather it is imperative that soft crabs be landed and placed under ice as quickly as possible. The peelers also must be quickly delivered to the shedding houses, since being out of the water for any considerable length of time in hot weather will result in a high percentage dying.

The fishing craft used by the crab fishermen are almost invariably of less than five net tons capacity. They are classified as canoes, skipjacks, and bateaux, and measure from 18 to 30 feet in length. For power they usually depend on sails carrying a mainsail and jib.

The daily catch of peelers and soft crabs by a crab fisherman will average from 100 to 300 crabs per day. However, the catch at times varies widely; for instance, one crabber at Crisfield during the week of May 7, this year, caught 18,000 peelers and soft crabs. At other times, however, the writer has been crabbing when the average catch ran from 6 to 20 crabs a day. In fact, on some days, even at the height of the season, no crabs at all were caught.

10/13/

The prices paid the fisherman ordinarily run from 1 to 3 cents per crab, depending upon the scarcity and demand. During the week of May 7, this year, the price paid at Crisfield was 1 cent each for soft crabs and peelers. However, when they are scarce, fishermen have been paid as high as 10 cents each for peelers and soft crabs.

The crabbers seldom ship their own catches but sell them to regular dealers called packers. The buildings occupied by the packers are plain frame structures usually built on pilings over the water and ordinarily consist of one room. Two to 6 men form the personnel of each packing firm, the number varying according to the season and amount of business transacted. After the packer buys the catch from the crabbers, the soft crabs are packed for immediate shipment and the peelers are placed in floats. The floats cost about \$4.00 each and are made of light planks with plain board bottoms and latticed sides. Here the crabs are kept until the shedding process is over. Before the peelers are placed in the crab floats each one is carefully examined by the dealer to determine its nearness to the shedding stage. All crabs in the same stage are placed together in one float. This segregation is mandatory inasmuch as it has been found that crabs which are not approaching the shedding state, when kept with soft crabs, will eat the latter.

The floats containing the peeler crabs are visited several times each day and night, being watched and "fished" particularly on the flood tide as it has been learned that the majority of the peelers shed at this time. The peelers that have molted or shed their hard outer shells and are now soft crabs are not immediately taken from the floats after shedding because they are too weak and soft for shipment. However, about two or three hours after shedding they become stiffer and feel "rubbery" to the touch. When this rubbery condition is reached the crab is in good condition for shipment. Only experienced men are permitted to fish the floats since soft crabs that are overlooked in the "fishing up" and are left for more than six or eight hours in the floats after shedding become hard crabs again. These overlooked crabs that have become partially hard are called "buckram" crabs. Buckram crabs are a total loss to the dealer inasmuch as they cannot be sold for soft crabs nor may they be cooked and picked for crab meat because they are too "watery".

After the soft crabs are removed from the floats, they are graded according to size and packed. The smallest crabs packed, about 3 1/2 inches in length from tip to tip, are called culls. "Buffalo" crabs, that is, crabs which have lost their claws and legs in shedding or otherwise are also sold as culls. Other grades are mediums, hotel primes, primes, and jump-bos.

The crates used for packing soft crabs are 20-, 30-, 40-, 60-, and 80-pound boxes. About 15 dozen prime soft crabs are packed in an 80-pound box. Soft crabs have but little tendency to move, and when once placed in position with their legs well folded up and their bodies placed obliquely they remain quiet for a long time. Another reason for packing them in this position is so the moisture will not run from their mouths. The crates are provided with two neatly fitting trays and the crabs are placed between two layers of seaweed. A piece of parchment paper is fitted on top of the crabs to keep the seaweed from mingling with and detracting from their appearance. The paper and the seaweed may easily be rolled back so that the prospective customer may inspect the crabs. After packing, each tray is given a slight sprinkling of finely crushed ice to "temper" the crabs. Before shipment they are re-iced with a heavy sprinkling of crushed ice. The writer has known of soft crabs being kept in moderately cool summer weather for as long as 8 days before shipment without serious mortality.

Since soft crabs are highly perishable the majority of them are transported to market by either motor-trucks or express. In addition to these carriers a small percentage is carried by steamer. If the haul is for a considerable distance refrigerator cars and trucks are used. In this connection the carrying compartments should be kept sealed at all times since excess air circulation rapidly melts the ice and dries out the crabs, causing them to die in large numbers. Only live soft crabs are shipped to market and, as the visitor in our terminal markets will note, the percentage of crabs reaching their destination alive is very high except in unusually hot weather.

10131

## WINTER FISHERY FOR MACKEREL

By J. R. Webster, Assistant Aquatic Biologist  
Division of Scientific Inquiry

U. S. Bureau of Fisheries

There used to be a time when the mackerel, Scomber scombrus, was not "in season" during the late winter and early spring. Bureau of Fisheries records now show that this no longer is strictly true; that fresh mackerel may be had all year, even though in comparatively small quantities during the cold months. The first four months of this year, draggers landing fares at New York City brought in about 78,500 pounds of fresh mackerel.

These draggers, operating on the fishing grounds off the Middle Atlantic coast were principally engaged in fishing for such species as butterfish, scup, sea bass, fluke, weakfish, whiting, and hake. Their mackerel catches were for the most part small "incidental" captures. For example, the Gyda Else, landing 22,000 pounds of groundfish at New York on January 31, had 195 pounds of mackerel. On March 10, she had 220 pounds of mackerel in a trip of over 27,000 pounds of groundfish. Not all mackerel landings were small, however. Notably large were those of the Sea King on February 10, with 18,800 pounds; the Viking on March 28, with 14,125 pounds; and the Paolina on January 25, with 11,480 pounds. These amounts are comparable to the sizes of fares of regular mackerel fishermen.

Large and small, the monthly landings of mackerel aggregated about 17,300 pounds in January, 24,300 pounds in February, 28,900 pounds in March, and 18,000 pounds in April. Fishermen and fish tradesmen no doubt have wondered what can be the significance of these "out-of-season" mackerel captures. In the first place, these fish were taken at a time when the shore traps were inoperative, both from bad weather and the necessary annual overhauling of gear. The fleet of purse-seining and gill-netting vessels was withdrawn from the mackerel fishery, not only on account of bad weather, but also because of custom, and inability to find fish in sufficient quantities to make their operations profitable. Shore traps and offshore seiners and netters account for the bulk of mackerel landings.

Secondly, it is doubtful that, had the traps and vessels been able to fish, they could have caught many mackerel. Water temperatures along the shore during winter run about 40°F. or less, which apparently is much too cold for this species. Winter temperatures over the continental shelf north of Cape Hatteras are also too low for mackerel to tolerate, generally speaking, and this is especially true at the surface. Seiners and netters must see fish in order to know where to set their gear. In other words, the low water temperatures prevailing over the continental shelf during the winter may force mackerel away from the shore and down from the surface. Water temperatures taken on research cruises have shown that thermal conditions similar to those near the surface and shore during the mackerel season also prevail along the edge of the continental shelf near the bottom, or at the surface much farther offshore than seiners and netters operate. This led fishery investigators to believe that part of the mackerel population spent the winter along the very edge of the continental shelf off the Middle Atlantic coast.

The third point of significance is that these winter catches of mackerel by draggers have occurred in such positions as to bear out the theory mentioned in the preceding paragraph. Recent interviews with some captains of the draggers catching the mackerel reveals that the grounds yielding the best catches were southeast of New York in 60 to 100 fathoms of water, close by "the Gully". This locality is very close to the edge of the continental shelf, so close, in fact, that sometimes, by changing their positions but a few miles, the draggers found water too deep for operating their nets.

Fourth and last, it is certainly safe to say that these winter mackerel catches can continue, and that further exploration of the grounds, with development of suitable gear, may insure even greater catches in the future. Many vegetables, fruits, and berries can now be had in quantity all the year. Why not mackerel?

10131



## NEW ENGLAND VESSEL LANDINGS DECLINE DURING APRIL

Landings of fishery products at the ports of Boston and Gloucester, Mass., and Portland, Maine, by fishing vessels during April 1939 amounted to 37,884,000 pounds, valued at \$826,000 to the fishermen. This is a decrease of 1 percent in quantity but an increase of 16 percent in value as compared with the landings during the same month last year. The principal items landed during April were haddock, 14,592,000 pounds; cod, 13,370,000 pounds; and rosefish, 4,142,000 pounds. Landings at Boston accounted for 85 percent of the fish landed at the three ports during April; these at Gloucester, 13 percent; and the landings at Portland, 2 percent.

Although landings of fishery products at the three ports during April were over 8,000,000 pounds greater than those during March, fishermen received \$80,000 less for their catch. The decline in value resulted from a decrease of nearly 1 cent per pound in the average unit price received for all species. In April, fishermen received an average of 2.18 cents per pound for their catch as compared with 3.04 cents per pound during March. Prices for all important species declined during the month.

In spite of the marked decline in prices during April, fishermen received a higher unit price for their catch than was received during April of last year when the average was 1.86 cents per pound.

During the four months ending with April, landings at the three ports totaled 144,634,000 pounds, valued at \$3,108,000, as compared with 129,605,000 pounds, valued at \$3,162,000 during the same period last year. This is a decline of 12 percent in the volume and 2 percent in the value of the landings. Receipts of all important items except flounders and rosefish decreased during the current year.

## FISHERIES OF MASSACHUSETTS

The past month has been marked by unsettled labor conditions in the industry both in Boston and Gloucester.

Rosefish.--The Bureau's agent reports that the improved quality and stricter inspection of rosefish (redfish) fillets in 1939 have led to a lower percentage of recovery from the round fish as compared with 1938.

New Bedford.--Vessel landings of fish and shellfish at New Bedford in 1938 totaled 18,000,000 pounds valued at \$955,000, according to a tabulation of the Bureau's agent. Flounders, mainly yellowtails and blackbacks, accounted for 47 percent of the total poundage. Almost 400,000 gallons of scallops were landed.

Lobsters.--Massachusetts lobstermen had a record catch in 1938. According to State figures, 2,276,300 pounds, valued at \$490,374, were caught by the fishermen. The 1938 volume was 8 percent greater than that of 1937, 25 percent more than that of 1936, and 24 percent more than 1935. The lobstermen averaged 21½ cents per pound in 1938, 26 cents in 1937, and 29 cents in 1936. The number of lobster fishermen, 1,076, remained practically unchanged during 1938. However, the number of lobster pots increased from 64,000 in 1937 to 70,600 in 1938. Lobster prices dropped considerably in May. Massachusetts has postponed construction of a proposed lobster hatchery until at least 1941.

Mackerel.--Seine mackerel appeared at the Boston Fish Pier in considerable quantities during May. On the 13th large mackerel brought only 4 cents, and small, 1 cent per pound.

## FISHERIES OF RHODE ISLAND

Oysters.--Largely because of last fall's hurricane, market oyster production is reported as one-third less than for the same period last year. The supply of seed oysters in Narragansett Bay seems to have been materially depleted in 1938 with no indication of replenishment thus far. Many seed oystermen now are clamming on private grounds.

Hard clams.--Hard clams are in good supply in most of the large producing areas in Narragansett Bay. Increased abundance is reported from private grounds. The opening of these grounds to clamming by the oyster firms controlling them may almost double the production of hard clams in Rhode Island this year. Prices are about 9 percent higher.

Soft clams.--Prices are normal and the supply is good in practically all areas.

Lobsters.--Catches have been light due to inclement weather. Prospects are satisfactory as compared with last year and increased yields are looked for with better weather. Prices averaged 35 cents to 37 cents per pound during most of April.

Miscellaneous.--Scup are 40 percent more abundant than during the same period in 1938. Market prices have dropped one-half despite the larger size of the fish this year. The 1938 spring run of pollock has not repeated itself so far. Striped bass are fairly abundant but indications are that they will not be so plentiful as in 1938. Weakfish did not appear in trap catches in quantity up to May 1. Fluke, however, were taken in normal quantities a little earlier than usual. Most of the few draggers remaining in service at Newport after last year's hurricane are preparing for the swordfish season which begins about June 1.

#### FISHERIES OF CONNECTICUT

Shad.--Up to May 1 few shad were caught in the Connecticut River. Many fishermen attributed this to flood conditions permitting the shad to pass under the nets. Though production was 25 percent under normal, prices to the fishermen were as low as 3 and 4 cents per pound.

Flatfish.--Catches of flatfish improved about the middle of May but prices remained low even for those fishermen who conducted retail stands of their own.

Lobsters.--With the advent of the Canadian product on May 1, prices declined considerably despite the scarcity of native lobsters. Some Connecticut lobstermen are reported to have contracted to supply summer resorts and similar establishments catering to the summer tourist trade with native lobsters at 27 cents to 30 cents per pound.

Oysters.--In the vicinity of Bridgeport the Bureau's agent reports that the September hurricane sanded private beds and destroyed most of the set and a good part of the marketable oysters. Oyster prices are reported as fairly satisfactory. The seed-oyster fishery is suffering from a lack of seed on the public grounds since there has been no set in the last two years. The presence of starfish and the poor condition of the beds do not augur well for the future of Connecticut's public grounds.

#### FISHERIES OF THE NEW ENGLAND STATES IN 1937

A recently completed tabulation of statistics by the Bureau concerning the fisheries of the New England States during 1937 places the commercial catch of fishery products at 670,864,000 pounds valued at \$19,937,000. This is an increase of 2 percent in quantity and 11 percent in value as compared with the catch and value in 1935 when the most recent preceding survey was conducted in this area.

Considerable increases appeared in the following items. Rosefish receipts increased 41 million pounds, cod 14 million pounds, flounders 10 million pounds, whiting 5 million pounds, scallops 4 million pounds, and cusk 3 million pounds. Offsetting these increases were sharp declines occurring in the mackerel and haddock fisheries. In comparison with 1935, mackerel landings dropped 38 million pounds while haddock landings were 25 million pounds lower in 1937. The 1937 mackerel catch amounting to 23 million pounds was the smallest of any year since 1919, while the haddock catch of 169 million pounds was nearly 100 million pounds less than in the peak year of 1930.

From the available data indications are that the price paid to the fishermen, based on an average for all species of fish, was 2.2 cents per pound. This was 10 percent higher

than the average of 2 cents per pound during 1935. Prices in the lobster fishery, which is of paramount importance to the New England fishermen, showed an average decline of 2 cents per pound over the two-year period.

As a producer of fishery products, the State of Massachusetts not only outranks all of the other States in the New England region but remains first in importance on the entire Atlantic and Gulf coasts, with a catch of 534,110,000 pounds of fish and shellfish valued at \$14,197,000. Landings in the other New England States, arranged according to their importance, were: Maine, 101,179,000 pounds valued at \$2,806,000; Rhode Island, 18,847,000 pounds valued at \$1,398,000; Connecticut, 16,063,000 pounds valued at \$1,440,000; and New Hampshire, 664,000 pounds valued at \$96,000. Receipts of four individual species of fish--haddock, cod, rosefish, and pollock--during 1937 each exceeded 50 million pounds and comprised 62 percent of the total fishery products taken.

The fisheries of this section furnished direct employment to about 31,980 persons consisting of fishermen, shore workers, and persons employed in the operation of craft transporting fishery commodities. Two years previously there were 29,150 persons employed in these fishery occupations. In 1937 there were 400 wholesale and manufacturing establishments in the producing areas of the five States; aggregate salaries and wages paid in these establishments amounted to \$7,705,000 and manufactured fishery products (canned, cured, packaged, and byproducts) were valued at \$24,039,000.

#### FISHERIES OF THE MIDDLE ATLANTIC STATES IN 1937

During 1937, commercial fishermen in the coastal areas of New York, New Jersey, Pennsylvania, and Delaware captured 264,652,000 pounds of fishery products, for which they received \$7,896,000. This is a decrease of 5 percent in volume but an increase of 23 percent in value as compared with the catch in 1935 when the most recent previous survey of the catch was made.

In the Middle Atlantic States, as in the Chesapeake, and South Atlantic and Gulf sections, fishermen receive a greater return for their production of shellfish than for their catches of finny fish. In 1937 fishermen in the Middle Atlantic States landed a total of 34,458,000 pounds of shellfish, valued at \$4,196,000. Although landings of finny fish were much greater, amounting to 230,194,000 pounds, the catch was valued at \$3,700,000, which is 12 percent less than was received for shellfish.

Based on the value to the fishermen, oyster meats were by far the most important product, amounting to 14,617,000 pounds, valued at \$2,371,000. Following in order were clam meats, 8,624,000 pounds, valued at \$1,111,000; menhaden, 148,505,000 pounds, valued at \$657,000; flounders, 10,876,000 pounds, valued at \$604,000; shad, 4,394,000 pounds, valued at \$406,000; squeteagues or "sea trout", 12,264,000 pounds, valued at \$358,000; and scallop meats, 3,089,000 pounds, valued at \$352,000.

It will be observed that two items of shellfish--oyster and clam meats--led all other products in value, while a third shellfish item--scallop meats--was seventh in importance.

New Jersey led in the quantity of fishery products taken in 1937 with a catch of 129,516,000 pounds, valued at \$3,201,000. However, the New York production yielded a greater return to the fishermen, the catch in this State amounting to 84,161,000 pounds, valued at \$4,371,000. Fishermen in Delaware took 50,940,000 pounds of fish and shellfish, valued at \$319,000, and those in Pennsylvania, 35,000 pounds, valued at \$5,000.

The fisheries in the coastal areas of the Middle Atlantic States gave employment to 14,690 persons in 1937. These consisted of 7,720 fishermen, 6,840 in wholesale and manufacturing establishments, and 150 on transporting craft. There were 419 fishery wholesale and manufacturing establishments in the producing areas of the four States; aggregate salaries and wages paid in these establishments amounted to \$8,612,000; and manufactured fishery products (canned, cured, packaged, and byproducts) were valued at \$18,659,000. This is an increase of approximately \$2,000,000 in salaries and wages, and of nearly \$5,000,000 in the value of the manufactured products as compared with 1935 when the most recent previous complete survey of these establishments was made.

## FISHERIES OF FLORIDA

Shad.--Production of shad at Mayport at the mouth of the St. Johns River showed a marked decrease in 1938 as compared with 1937, which, in turn, was considerably less than 1936. Many fishermen believe the jetties have formed sand banks which hinder the shad from schooling before entering the river. Along with the decrease in catches at Mayport is reported an increase in catches on the Halifax River.

Crabs.--The crab meat industry in the Jacksonville and Mayport area reports continued activity. One large plant at Mayport has not ceased operations in the last 18 months and at the present time is operating at full capacity. Crabs are quite plentiful at the present time. New York market prices for crab meat have been generally high. Crab catches are reported to be quite good in the St. Johns River between Palatka and Welaka. Approximately 350,000 pounds of crabs were produced in this area in 1938. The usual method of capture in the upper part of the St. Johns River is by trot lines. However, most fishermen in the Mayport-Jacksonville section use traps, 50 traps being the usual number each fisherman operates. The crab fishery in the upper St. Johns River has been of no consequence until the last year and a half, crabs before that time having been used for bait.

Red snapper.--Good catches were landed at Fort Pierce in 1938 but the present season has not been so successful.

Shrimp.--Shrimp landings at Fort Pierce show an increase over 1937, being approximately 50 percent greater. Several new firms have started operations and it is expected more shrimp houses will be built this fall.

United States engineers at the present time are conducting a survey of the shrimp fisheries to determine the tonnage hauled to the various ports through the Inland Waterway to New Smyrna, St. Augustine, Mayport, and Fernandina. Appropriations have been made for the dredging of a channel at New Smyrna and work is expected to start in the near future. St. Augustine has been declared a port district and a new canal is to be dredged which will greatly improve the present facilities for landing shrimp. Reports from St. Augustine reveal that fairly good catches of shrimp are now being landed. In April, 50 pounds of shrimp was a good day's catch for the ordinary boat. Recently, however, boats were bringing in 300 to 350 pounds of shrimp per day as an average. Many of the dealers plan to leave for South Carolina within the next week. Apparently Florida fishermen will make no landings in Georgia this season because of high license fees for out-of-State boats and the absence of a reciprocal agreement between Florida and Georgia. Most of the fleets are moving north to Beaufort, Port Royal, and Southport. Many that formerly migrated up the coast expect to remain in St. Augustine and Fernandina.

## FISHERIES OF ALABAMA

Oyster and shrimp.--According to State records, the oyster season just closing and the present (fall and winter 1938-1939) shrimp season have been the best for the past four years.

Crabs.--Considerable interest is being evinced in canning crabs in Alabama, based on reports of successful crab canning in North Carolina and experimental packs in New Orleans. Crabs are reported to be plentiful this spring. There was a slight rise in price early in May.

Fresh-water fish.--Catfish, buffalofish, and paddlefish are reported scarce at present. Prices are good. In 1938 catfish were much less abundant than in 1937.

## CHICAGO FISHERY RECEIPTS DECREASE IN APRIL

Receipts of fresh and frozen fishery products at the Chicago Wholesale Fish Market during April totaled 3,510,000 pounds. This was a decrease of 17 percent or 722,000 pounds

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under receipts for the previous month when shipments amounting to 4,232,000 pounds were received. The sources from which the largest shipments originated were Wisconsin, with principally fresh-water smelt, and Michigan, chiefly lake trout.

Motor-trucks carried 43 percent of these seafoods to Chicago; express, 35 percent; and rail freight, 22 percent.

According to figures collected by the Bureau, the Chicago Wholesale Fish Market received shipments of fresh and frozen fishery products totaling 14,010,000 pounds during the four-month period beginning January 1 and ending April 30, 1939.

#### CHICAGO FISHERY PRODUCTS RECEIVED FROM MANY POINTS

Seafoods arriving in the Chicago Wholesale Fish Market during April originated in 26 States, 5 Provinces of Canada, and Alaska. The State and Province with the largest shipments were Wisconsin and British Columbia, which together supplied this market with nearly one-third of its total April receipts. Over one-half of the Wisconsin shipments were composed of smelt. Ninety-three percent of the British Columbia imports to Chicago were fresh and frozen halibut. The Alaska shipments, which were transported by express, contained but one variety--halibut.

#### FISHERIES OF THE PACIFIC COAST STATES IN 1937

The commercial catch of fishery products in the Pacific Coast States in 1937 amounted to 1,576,877,000 pounds, valued at \$28,776,000. This is a decrease of 18 percent in volume but an increase of 16 percent in value as compared with the catch in the previous year.

The decline in the volume of the production resulted from reduced catches of pilchards which declined from the record yield of 1,502,299,000 pounds in 1936, to 1,139,505,000 pounds in 1937. In spite of the 24 percent decline in the production of pilchards, the catch of this species was by far the most important product taken by fishermen from the Pacific Coast States, the catch of these fish accounting for 72 percent of the quantity of fish and shell-fish taken.

The marked increase in the value of the Pacific Coast catch in 1937 was caused by generally higher unit prices for nearly all products. In this connection, it is interesting to note that although the catch of pilchards declined 24 percent as compared with the previous year, fishermen received but 4 percent less for their catches of these fish.

Based on the value to the fishermen, tuna and tunalike fishes were the most important product, amounting to 162,648,000 pounds, valued at \$9,074,000. Following in order were pilchards or sardines, 1,139,505,000 pounds, valued at \$6,815,000; salmon, 95,661,000 pounds, valued at \$5,427,000; halibut, 24,418,000 pounds, valued at \$2,177,000; oysters, 8,240,000 pounds of meats, valued at \$788,000; flounders, 16,285,000 pounds, valued at \$749,000; and crabs, 8,356,000 pounds, valued at \$721,000.

The catch in Washington amounted to 155,805,000 pounds, valued at \$7,222,000; Oregon, 68,945,000 pounds, valued at \$2,609,000; and California, 1,352,127,000 pounds, valued at \$18,945,000.

These fisheries gave employment to 41,600 persons in 1937. They consisted of 21,600 fishermen, 19,800 persons in wholesale and manufacturing establishments, and 200 on transporting craft. There were 37,400 persons employed in these fisheries in 1936. In 1937 there were 330 fishery wholesale and manufacturing establishments in the three States; aggregate salaries and wages paid in such establishments amounted to \$10,669,000; and manufactured fishery products (canned, cured, packaged, and byproducts) were valued at \$56,150,000. In 1936 there were 339 fishery wholesale and manufacturing establishments; aggregate salaries and wages amounted to \$9,365,000; and manufactured fishery products were valued at \$52,498,000.



## PACIFIC COAST HALIBUT LANDINGS DECLINE

Halibut landings at Seattle, Washington, and at ports in British Columbia and Alaska during April amounted to 6,713,000 pounds as compared with 7,579,000 pounds during the same month last year. Landings at Seattle accounted for 2,638,000 pounds, or 39 percent of the total landings; Prince Rupert, 2,397,000 pounds or 36 percent; Alaskan ports, 1,004,000 pounds, or 15 percent; Vancouver, 499,000 pounds, or 7 percent; and landings on Vancouver Island, 175,000 pounds, or 3 percent. United States vessels landed 73 percent of the halibut taken and Canadian vessels, 27 percent.

Landings of halibut at Seattle during April yielded fishermen an average of 7.52 cents per pound as compared with 7.30 cents during the same month last year. Data on prices paid at other ports are not available at this time.

## RAZOR CLAM STOCKS IN THE STATE OF WASHINGTON

Razor clams on the beaches of the State of Washington suffered an almost continuous decline in abundance from 1920 to 1932 but since the latter year stocks have increased at a relatively rapid rate, according to Biological Report No. 37B entitled "The Present Status of the Razor Clam Stocks in the State of Washington" by Milner B. Schaefer of the State Department of Fisheries at Seattle, Wash.

The report states that "the rapid recovery of the razor clam stocks, resulting from the decrease in the intensity of the fishery following 1932, appears to indicate that the stock has not been driven below the level at which it can adequately reproduce itself and recover rapidly upon the removal of the strain of the fishery".

The report includes sections on the razor clam fishery, its development, changes in abundance, and age composition of the catch.

## FROZEN FISH TRADE

## Domestic Cold-storage Holdings of Fishery Products Decline

Cold-storage holdings of frozen fishery products amounted to 35,161,000 pounds on May 15, 1939, as compared with 45,981,000 pounds on the same date last year. This is a decline of nearly 11,000,000 pounds. Decreased holdings were reported from all sections except the Gulf and Pacific Coast States and the section comprising the States of Indiana, Illinois, Michigan, and Wisconsin. Current holdings in the New England States are unusually low, totaling but 6,008,000 pounds, as compared with 16,015,000 pounds a year ago.

Holdings of frozen fish (exclusive of shellfish) on May 15, 1939, totaled 29,764,000 pounds, a decrease of 12,140,000 pounds, as compared with the holdings on the same date last year. Stocks of cod, haddock, pollock, and rosefish fillets, croakers, and mackerel on May 15 were from 50 to 75 percent less than on the same date last year. Important items held in greater quantities than a year ago were blue and sauger pike, smelt, and whitefish.

Although current holdings of finny fish are 29 percent less than those of a year ago, stocks of frozen shellfish have increased. On May 15, holdings of shellfish totaled 5,397,000 pounds, an increase of 1,320,000 pounds as compared with the same month last year. Holdings of frozen shrimp, which accounted for 63 percent of the total shellfish holdings were responsible for the major portion of the increase in the stocks of these products.

A total of 14,654,000 pounds of fishery products was frozen during the month ended May 15, 1939. This is a decrease of 3,594,000 pounds as compared with the same period last year. The decrease resulted principally from reduced freezings of sea herring, mackerel, haddock fillets, and halibut. The quantity of mackerel frozen was unusually small, totaling but 267,000 pounds as compared with 2,300,000 pounds last year, and an average of over 1,000,000 pounds during this period for the previous five years.

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Over 2,000,000 pounds of haddock fillets and halibut were frozen during the month; freezings of cod fillets and shrimp each totaled over 1,000,000 pounds; while more than 500,000 pounds of each of the following items--pollock and rosefish fillets, croaker, and smelt--were frozen.

#### Boston Freezer Holdings Show Large Decrease

Boston cold-storage warehouse holdings of frozen fishery products increased 55 percent or 2,022,000 pounds from the last Wednesday in April to the last Wednesday in May, according to statistics collected by the Market News Service. The two principal items stored, in poundage, were cod and haddock fillets with holdings amounting to 2,310,000 pounds or approximately 40 percent of all holdings. During the monthly period the holdings of cod fillets increased 58 percent while haddock fillets increased 103 percent. The total holdings of all frozen fishery products at Boston on May 31, 1939, amounted to 5,718,000 pounds, a decrease of 7,886,000 pounds or 58 percent compared with holdings of a year ago. While the trend for the year was a reduction in holdings, several species showed increases, notably, squid, silver salmon, flounders and soles, and scup.

#### New York Frozen Fishery Holdings Increase

On the last Thursday in May fishery cold-storage warehouses in New York City stored 5,496,000 pounds of frozen fishery products. Over one-third of these fishery holdings consisted of four species--sturgeon, 598,000 pounds; shrimp, 563,000 pounds; whitefish, 434,000 pounds; and Japanese swordfish, 381,000 pounds. In addition to these species, 57 other classifications of seafoods were also stored. During May the total holdings increased 593,000 pounds over the holdings for the previous month; however, compared with holdings a year ago, a decrease of 25 percent or 1,857,000 pounds was shown. During May considerable increases were noted in the holdings of squid, spiny lobster tails, and flounders and sole.

#### Chicago Holdings of Frozen Shrimp Increase Sharply

Except in the holdings of frozen shrimp, little change was noted in the holdings of frozen fish and shellfish in cold-storage warehouses in Chicago during May. The Chicago freezer holdings of fishery products from the last Thursday in April to the last Thursday in May increased 9 percent or 401,000 pounds, 244,000 pounds of which were frozen shrimp. The holdings of this crustacean on May 25 amounted to 479,000 pounds, an increase of 104 percent for the month. Other frozen items in addition to shrimp which made sizeable gains during the month were smelt, yellow pike, and squid. The total warehouse holdings of fishery products, consisting of 44 classifications of seafoods, on May 25, amounted to 4,714,000 pounds.

#### CANNED FISH TRADE

##### Shrimp Pack Over One Million Cases

According to figures compiled by the Jacksonville Fishery Market News office, 1,040,215 standard cases of shrimp were packed in the 10½ months from July 1, 1938, to May 13, 1939, in the 40 canneries in the Gulf and South Atlantic States operating under the Seafood Inspection Service of the Food and Drug Administration. The canneries have averaged about 65 operating days each for the season to date and have used a total of 57,806,732 pounds of raw shrimp. It is believed that these figures represent about 90 percent of the shrimp packed in this country.

##### California Pack of Tuna Nearly Twice That of Year Ago

The preliminary statement of the Division of Fish and Game of the State of California reports that the pack of tunas during the first four months of 1939 amounted to 727,000  
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\* cases of 48 one-half pound cans. This is an increase of 92 percent as compared with the pack of 379,000 cases during the similar period of 1938. Yellowfin tuna was by far the most important tuna commodity canned, the pack of this variety amounting to 80 percent of the total four-months' production. Other tuna commodities were, in order: Striped tuna or skipjack; albacore; tuna, tonno style; tuna flakes; bonito; bluefin tuna; and yellowtail. Canneries in the San Diego district accounted for 58 percent of the total pack, and those in the San Pedro district, 42 percent.

#### California Mackerel Pack Down

The pack of canned mackerel in California during the four-month period ending in April 1939 amounted to 146,000 standard cases of 48 one-pound cans, according to a preliminary release issued by California's Division of Fish and Game. The current year's pack to date represents a decrease of 27 percent as compared with the production during the same period of 1938. Virtually the entire pack during the current year was produced in the San Pedro district.

#### FOREIGN TRADE IN FISHERY PRODUCTS INCREASES

During April of this year imports of edible fishery commodities into the United States totaled 22,171,000 pounds, an increase of 16 percent as compared with the same month a year ago. The principal items imported during April were salted groundfish, 3,486,000 pounds; fresh and frozen fresh-water fish, 2,243,000 pounds; canned sardines, 2,042,000 pounds; and salted herring, 1,478,000 pounds.

Exports of edible fishery products during April amounted to 8,990,000 pounds, an increase of 14 percent as compared with the same month last year. Two items accounted for 73 percent of the exports during April. These were canned salmon, 3,655,000 pounds, and canned sardines, 2,866,000 pounds.

Imports of edible fishery commodities during the first four months of this year totaled 117,350,000 pounds, as compared with 100,371,000 pounds during the same period in 1938. Important items showing marked increases during the current year were salted groundfish, 16,399,000 pounds, an increase of 20 percent; salted herring, 14,783,000 pounds, an increase of 15 percent; canned sardines, 8,687,000 pounds, an increase of 50 percent; canned crab meat, 3,601,000 pounds, an increase of 119 percent; and canned tuna, 2,988,000 pounds, an increase of 81 percent.

Exports of edible fishery products during the first four months of the current year totaled 47,358,000 pounds, an increase of 28 percent as compared with the same period last year. Exports of canned salmon amounted to 16,986,000 pounds, an increase of 57 percent as compared with those for the first four months of 1938, while those of canned sardines totaled 18,996,000 pounds, an increase of 21 percent.

#### NEW YORK'S NEW FISH MARKET BUILDING COMPLETED

The new market building constructed by the New York City Department of Markets to replace the one that collapsed nearly three years ago has been completed and turned over to the New York Wholesale Fish Dealers' Association. The firms formerly occupying temporary quarters along the waterfront moved their equipment into the new building on June 9 and started doing business in the new quarters on Saturday, June 10. The temporary structure is being torn down and, when cleared away, will give much needed parking space for buyers.

**FISHERY TRADE INDICATORS**  
(Expressed in Thousands of Pounds)

Item	Month	Latest month	Same month a year ago	Previous month
<b>FRESH FISH LANDINGS</b>				
Boston, Mass. ....	April	32,029	29,683	26,712
Gloucester, Mass. ....	do	4,924	4,428	2,299
Portland, Me. ....	do	928	4,201	746
Boston, Gloucester, and Portland:				
Cod.....	do	13,367	12,757	6,659
Haddock.....	do	14,592	18,518	14,364
Pollock.....	do	1,999	1,935	1,621
Rosefish.....	do	4,142	1,956	3,812
Pacific Coast:				
Halibut, North Pacific ports.....	do	6,713	7,579	-
Halibut, Seattle.....	do	2,638	3,293	-
<b>FISH RECEIPTS, CHICAGO 1/</b>				
Salt-water fish.....	do	721	(2)	982
Fresh-water fish.....	do	2,333	(2)	2,965
Shellfish, etc. ....	do	457	(2)	285
By truck.....	do	1,504	(2)	1,049
By express.....	do	1,214	(2)	646
By freight.....	do	792	(2)	2,536
<b>COLD-STORAGE HOLDINGS 3/</b>				
New York, N. Y.:				
Salt-water fish.....	May	2,622	4,600	2,456
Fresh-water fish.....	do	1,534	1,153	1,594
Shellfish, etc. ....	do	1,340	1,600	853
Boston, Mass.:				
Salt-water fish.....	do	4,825	12,221	3,492
Fresh-water fish.....	do	17	14	10
Shellfish, etc. ....	do	875	769	194
Chicago, Ill.:				
Salt-water fish.....	do	1,097	(2)	1,122
Fresh-water fish.....	do	2,736	(2)	2,677
Shellfish, etc. ....	do	599	(2)	291
Unclassified.....	do	283	(2)	224
United States:				
Haddock fillets.....	do	2,074	5,893	1,404
Halibut.....	do	2,901	3,810	775
Mackerel.....	do	998	3,125	656
Pollock fillets.....	do	647	2,040	332
Rosefish fillets.....	do	443	1,704	535
Salmon.....	do	2,025	2,644	3,052
Whitefish.....	do	1,554	1,403	1,565
Whiting.....	do	1,672	799	2,342
Shrimp.....	do	3,425	(2)	3,542
New England, all species.....	do	6,008	15,992	5,093
Middle Atlantic, all species.....	do	7,989	10,181	7,178
South Atlantic, all species.....	do	2,501	3,394	1,374
North Central East, all species.....	do	7,914	5,596	6,627
North Central West, all species.....	do	2,042	2,758	2,401
South Central, all species.....	do	1,013	523	844
Pacific, all species.....	do	7,694	7,361	6,228
<b>FOREIGN FISHERY TRADE 4/</b>				
Exports:				
All edible fishery commodities.....	April	8,990	7,864	13,810
Canned salmon.....	do	3,655	2,537	5,302
Canned sardines.....	do	2,866	3,069	5,108
Imports:				
All edible fishery commodities.....	do	21,171	19,127	31,201
Fresh-water fish and eels, fresh or frozen.....	do	2,243	2,798	6,081
Canned tuna.....	do	716	666	970
Canned sardines.....	do	2,042	952	2,041
Cod, haddock, hake, etc., pickled or salted.....	do	3,486	5,082	3,117
Herring, pickled or salted.....	do	1,478	945	3,980
Crab meat, sauce, and paste.....	do	600	430	1,053
Lobsters, not canned.....	do	803	1,346	897
Lobsters, canned.....	do	34	53	33

1/ Consists of direct receipts of dealers, brokers, and smokers

2/ Data not available.

3/ Data for individual cities are as of the last Thursday of the month, except those at Boston which are for the last Wednesday of the month, and those for geographical areas and the total of the United States which are as of the 15th of the month.

4/ From data compiled by the Bureau of Foreign and Domestic Commerce.

Note.—Data for the latest month are subject to revision.

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## THE MINERAL CONTENT OF THE EDIBLE PORTIONS OF SOME AMERICAN FISHERY PRODUCTS

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Investigational Report No. 41

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In addition to the established value of fishery products as protein foods and the importance of many of them as sources of vitamins, seafoods also are excellent sources of many essential minerals, according to Fisheries Investigational Report No. 41, entitled "The Mineral Content of the Edible Portions of Some American Fishery Products", by Hugo W. Nilson and E. J. Coulson. The report brings out the following facts, among others:

1. The flesh of canned salmon is an excellent source of protein and calories. The bones are soft and are an exceptional source of bone forming minerals. Canned salmon contains an equal quantity of magnesium, almost twice the phosphorus and about fifteen times as much calcium as beef round.

2. Oysters are an excellent source of iron and copper and are one of the best sources of iodine. They follow pork and beef as a source of iron and are first in copper content among common food stuffs on the basis of an average serving portion. They also contain almost half as much calcium, 5 times as much magnesium and more phosphorus than milk on an equal weight basis.

3. Shrimp contain an equal quantity of phosphorus, twice the magnesium, and almost 5 times as much calcium as beef round. They include almost one-half the iron content of oysters and the copper content approximates that of white bread. Shrimp also is an excellent source of iodine.

The report also includes information on the mineral content of fillets and crab meat and discusses the daily requirements of essential minerals.

The report may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5 cents. If purchased in quantity lots of 100 or more, a discount of 25 percent is allowed.



